

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



Information

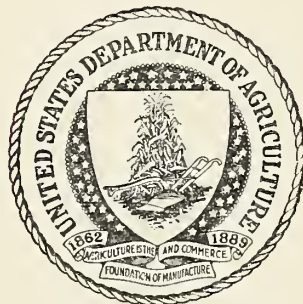
FOR PUBLIC **SPEAKERS** ON FOOD WASTE

U.S. DEPARTMENT OF AGRICULTURE
US FOOD DISTRIBUTION ADMINISTRATION



JUL 3 1944

UNITED STATES
DEPARTMENT OF AGRICULTURE
LIBRARY



BOOK NUMBER 1.9422
N2In3
503697

c po 8-7671

AGRU
811

1036897

INTRODUCTION

Whenever there is a vital message to carry to the public, speakers are in the forefront in carrying it to them. This has been true all through our history, in every issue that has confronted our country. It is true of the war in which we are now engaged. It will be true in the reconstruction to follow the coming of peace.

And all through America today, wherever clubs and forums and groups meet together, men and women are talking out the problems we must all unite to solve. It is here in these face-to-face groups, with every member participating as speaker, listener, questioner, discussor, that democracy is most truly alive. In these town meetings, with neighbor talking to neighbor, we see government-in-being.

The following pages are addressed to speakers. They contain information on one of the vital problems of the war: how every American can add to our food supplies by helping to reduce the waste of food. The facts these pages contain are but little known to the American people. The action they recommend (to save food) is one in which every man, woman, child can participate. For such a subject as this, every speaker will find many audiences. It is a war message he will be proud to deliver and one they will be glad to hear.

October 1943

TABLE OF CONTENTS

Part I: Suggestions to Speakers

1. Characteristics of the food situation which make it particularly adapted to public speakers
2. Potential audiences to be addressed
3. Speech methods recommended for talks on food
4. Points for development in speeches

Part II: Materials for Speeches

1. We have a unique food shortage
2. The causes of the shortage
3. Meeting the need
4. An important part of the problem is our waste of food
5. Areas in which food waste occurs
6. How food is wasted in the home
7. Conservation is our answer

Part III: Summary of Facts on Food Waste

1. How much do we eat?
2. How much food do we waste?
3. What kinds of food do we waste?
4. What can we do about it?

Appendix

Food Conservation Talks by Food Specialists

INFORMATION FOR PUBLIC SPEAKERS

on

FOOD WASTE

PART I: SUGGESTIONS TO SPEAKERS

1. Characteristics of the food situation which make it particularly adapted to public speakers:

- (a) It is a personal problem: it touches every American individually. Hence it calls for face-to-face consideration.
- (b) It is a vital problem: there is nothing else so pressing as the question of having enough to eat. Those who may fear hunger will want to see, hear, and know the source of information about the food situation.
- (c) It is a complex problem: it involves so many considerations that few people would bother to trace them out through written documents. Good speakers can clarify them, a step at a time.
- (d) It is a challenging problem: audiences will want to ask questions, voice objections, request further information, discuss implications.
- (e) It is a local problem: every community has its own supply, its own demand. Whatever is said about the food situation should be based primarily upon the facts of local supply and demand, which speakers can secure on the spot.

2. Potential audiences to be addressed:

- (a) Men's and women's luncheon clubs.
- (b) Women's clubs.
- (c) Fraternal lodge meetings.
- (d) Sunday school and church groups.
- (e) High school assemblies.
- (f) Labor union meetings.
- (g) Professional group meetings: retailers, chamber of commerce, board of trade, etc.

(h) Farmers' meetings.

3. Speech methods recommended for talks on food:

- (a) Should be based on local food situation.
- (b) Should be factual and specific.
- (c) Should incorporate charts, graphs, and pictures, when possible.
- (d) Should be followed by "hand-outs" of printed or mimeographed materials.
- (e) Should be accompanied when possible by a demonstration.
- (f) Should be brief, crisp, pointed.
- (g) Should lead up to a definite program of recommended action.
- (h) Should be tied in with a community food program headed by local Nutrition Committees or other qualified leadership.
- (i) Should be followed by audience questions and discussion.
- (j) Should be adapted to interests of particular audience addressed.

4. Points for development in speeches:

As public speakers take part in the general campaign to reduce America's food wastage, there are various points which they will want to get across to their audiences. A series of these points is listed below, with a brief indication of the factual support which might be given to them and of the importance of their role in the food situation. In developing these points, either singly or in combination, speakers should draw as heavily as possible upon their observation of local food wastage conditions.

The national food waste figures are never as significant for your audience as the waste conditions in their own community. And whatever remedies are undertaken will, of necessity, be local remedies (though they contribute to the solution of a national problem). This is a problem for every locality to tackle for itself. No good will be accomplished if people are aroused to the enormity of America's food waste only to feel that others are doing the wasting. The result of every speech should be to impress upon the auditors an individual determination to eliminate their own waste of food.

In accomplishing this, there is one point above all others which must be made, namely: most food waste occurs not in pound or bushel or acre lots, but in ounces and bits and driblets. The waste that counts most is not the few flagrant instances that everyone condemns, bad as these may be, but the steady stream of waste that flows in small bits from every home, every store, every restaurant and every other factor in the line from farm to home, but surges up into mountainous proportions on every garbage dump.

Speakers will find most auditors denying there is much waste of food in their own homes; but they will find these same people are very much perturbed if the garbage collection is a day or so late. Somehow the garbage cans get filled. A challenge speakers might make to their audiences is that they go home, spread out a newspaper on the kitchen floor, and see what they find in their own trash pails. In the typical home of the average auditor (yes, and of the average speaker, too) is where the battle on food waste must be waged.

In getting this point of view established, what points should the speaker make? Here are some suggestions which will provide the basis for many speeches:

- (a) Farmers are doing their part; let consumers do theirs. Food production has established a new record in every war year - but why produce food only to waste it? The greatest reservoir of extra food is in the amount we now waste.
- (b) Victory gardeners have made tremendous contributions to our food supply, to the extent, in 1943, of 4 million acres of gardens producing some 8 million tons of produce. The job isn't done till every ounce of the food is eaten or preserved.
- (c) We can improve our nutrition, and health, on less food. A small well-balanced meal might be much more nourishing than a large one with few nutritive values. A basic knowledge of nutrition will save food, save health, and save money.
- (d) There are war-time demands for food which must be met: to feed our Army of ten million men, to feed our war workers who are working harder and for longer hours than ever before, and to send as much food as we can spare to increase the fighting power of our allies.
- (e) While we feel natural irritation at being unable to get the foods we most desire in the full quantities we can afford to buy, we know that we are the best-fed people in the world. We cannot afford to complain in the midst of a starving world.

- (f) Saving food is first of all a matter of will - of determination; and then it is a matter of knowing how - of information. Speakers will vary in which of these factors they stress most. Some audiences need to be impressed with the amount of waste and the need for saving - and some speakers are most effective in carrying this kind of impressive message to them. Other audiences want simply to be told where and how the waste occurs, and how it may be stopped. Speakers professionally trained in food handling can do this job best. But any speaker can give his audiences a great deal of practical advice that will help them save food. Materials helpful in establishing both the will and the knowledge to reduce food waste will be found in Parts II and III of this Handbook. Further information may be secured from (1) the Nutrition Committee of the local Defense Council; (2) the County Agricultural Agent; (3) newspapers, radio, magazines; or (4) the Food Distribution Administration, U. S. Department of Agriculture, Washington 25, D. C.

PART II: MATERIALS FOR SPEECHES

1. WE HAVE A UNIQUE FOOD SHORTAGE

America, one of the foremost food producers in the world, is faced with a food shortage. The Nation with the highest per capita food supply among the great powers faces the prospect of retreating from its past standards during a period when it is producing more food than ever before in its history.

The American food supplies are at present larger and will remain larger than those of any other of the great powers - large enough to meet our individual nutritional requirements, although we may expect a shortage of some familiar foods and a shift to consumption of some of the "newer" and less familiar foods.

Across the Atlantic, the allied food front is grim. In the Soviet Union, millions of civilians are suffering from malnutrition. (According to a recent eye-witness account, thousands of Russian civilians in the fall of 1942 appeared to be too hunger-weakened to survive the winter). And allotments of food have been decreasing. In Britain, war-time food supplies have been sufficient only because of Lend-Lease aid. While health has been maintained on the whole, immediately prior to the introduction of Lend-Lease the average civilian had lost 7 to 20 pounds unregained since. Anemia due to poor diet has increased among women and children.

In countries such as Greece, Yugoslavia, Czechoslovakia, France, and Poland, millions are living close to the starvation level. Tens of thousands have died of starvation. Thousands of children are reported to have become rachitic. In Belgium, the Netherlands, and Norway, large sections of the population are weakening under diets ranging between 1100 and 1500 calories, against a recommended relief minimum of 2000 calories and a recognized requirement of 2800 calories in the United States. In the Netherlands, contagious diseases are said to have doubled, due partly to nutritional deficiencies, partly to lack of medical supplies. In Belgium, nutritional edema is reported to have become widespread.

These people all are our allies. Their victories and defeats are ours as well. From both strategic and moral necessity their problems are ours. And it is in these terms that our shortage is most real.

2. THE CAUSES OF THE SHORTAGE

This is a war-time shortage, a problem created by the war's immense absorption of manpower and machines and the food and materials to keep them going. It need not be an occasion for alarm, but it is an occasion for serious concern.

- (a) In 1942, our armed forces needed more than 7 percent of the food we produced. In 1943, nearly 10,000,000 men strong, they require 12 percent to 13 percent of our food. They are consumers - not producers - and now have embarked on the most gigantic application and expenditure of material in our history.
- (b) Last year, new millions joined our war work-army, a mighty army laboring longer hours at heavier work for more money than ever before. This year, more millions are joining, swelling the total, stepping up food requirements again, developing purchasing power that is generating heavier demands on the home food front.
- (c) In 1942, our fighting allies received almost 6 percent of our food. In 1943, 10 percent to 12 percent is being set aside and shipped to them. If they are to keep up their heroic fight, they require more food than they can raise.

Many sources of British food supply have been cut off by the Axis blockade. The British with great effort have increased their domestic production to the point where it meets two-thirds of their needs; but an island one-half the size of Texas cannot support a population eight times as large. Only with Lend-Lease aid can they continue their war production effort at its present level.

The Russians lost the crops of approximately 40 percent of their best farm lands, including the rich Ukraine, in the Nazi drive of 1941-42. (Translated into American terms, such a blow would amount to Nazi occupation of the wheat, corn, and dairy land of the Dakotas, Minnesota, Wisconsin, Nebraska, Iowa, Illinois, and Kansas). Although the Russians have regained much of these crop lands this year, it will take over a year to restore production.

With allied armies now assualting Hitler's Europe we must set aside reserves to help feed and rehabilitate the peoples our armies liberate.

These are the demands that together have created the problem despite a record-breaking 1943 food production that is about 31 percent above the pre-war 1935-39 average.

3. MEETING THE NEED

We are learning what to do about it. The first attack was an attempt to meet the problem through increased crop production. The limits in this direction have now been revealed. We can't put men enough in the lines to beat the Axis and not feel a shortage of farm labor. We can't give our fighters superiority in planes, tanks, and ships and expect to have all the tractors we want for the farmers. Bad weather, the perennial hazard of agriculture, interfered seriously with 1943 production, and could do it again. We must produce all we can and we are planning for still larger production in 1944, but the problem is too formidable to be solved through this approach alone.

To handle the problem action is necessary along five broad lines - and the action is under way.

- (a) We must adjust ourselves to new ideas and to changing supply situations on the food front. For example, we must abandon the pre-war belief that our food resources are limitless. We must be ready to give what is needed and to use what is available, understanding that this is the way to win the war.
- (b) We must produce to the limit of our capacity. This, despite any handicaps in the form of machine or skilled labor shortage, and despite any hazards, such as frost, flood, or drought. We are laying groundwork for 1944 production in excess of the 1943 production. We raised 4 million acres of Victory Gardens this year. Next year we'll plant more of them.
- (c) We must share our supplies. This means sharing with our armed forces, sharing with our fellow civilians, and sharing with our fighting allies through the Lend-Lease agreements and the rehabilitation program.
- (d) We must eat the right kinds of food. "Please the palate" has been an insufficient guide. Appetites have been satisfied while hidden hungers have robbed us of full health and efficiency we need in the war work program. Proper nutrition becomes a must.
- (e) We must conserve. Conserving signifies, first of all, utilizing all available surpluses, both local and national. It includes canning, drying, freezing, etc.

Conserving means, secondly, eliminating waste of food - eliminating all possible waste in every area in which it occurs.

4. AN IMPORTANT PART OF THE PROBLEM IS OUR WASTE OF FOOD

How important is food waste in relation to the whole food problem? Where does food waste occur? What's back of it? Can the problem, or any important part of it, be solved through aggressive measures to reduce the waste to a minimum? THE DATA INDICATE THAT WE AMERICANS WASTE FROM 20 PERCENT TO 30 PERCENT OF ALL THE FOOD WE PRODUCE.

We waste enough food on the home front to feed our entire armed forces, plus approximately enough to meet all our Lend-Lease food agreements in the bargain. Such is the appalling magnitude of our waste - a conclusion substantiated by the best data available from Government and private sources. Certainly this indicates that waste is a tremendously important part of our food problem, and that we should deal with it accordingly.

5. AREAS IN WHICH FOOD WASTE OCCURS

We will proceed effectively only as we note where the waste occurs, where along the line inquiry can best focus, and what the governing attitudes and habits are.

Food waste occurs in every major area where food is handled - on the farm - in transit - in the processing plant - in the whole-sale house - in the retail store - in the public eating place - in the home.

(a) Waste on the Farm

An almost incalculable amount of waste takes place on the farm. Insect and rodent damage, much of which occurs on the farm, runs to more than \$1,750,000,000 yearly. Plant diseases deprive us of hundreds of millions of bushels of farm crops yearly. For example, it is estimated that in 1939 common plant diseases destroyed 44,000,000 bushels of wheat, 198,000,000 bushels of corn, 59,000,000 bushels of potatoes, and 7,000,000 bushels of apples. Unskillful cultivation also reduces yield. After crops have ripened they may remain unharvested because of local labor shortage, or because of market gluts that lower prices below production and marketing costs. During harvest rough digging, picking, and careless packing cause waste. Inadequate storage contributes to waste on the farm.

(b) In Transit

Waste takes place also during shipment. Livestock lose weight in transit; animals are injured or killed accidentally. Perishable commodities are damaged as a result of insufficient storage facilities and delays in transportation. Produce is mashed and bruised when it is jostled about en route.

(c) In the Wholesale House

Certain waste takes place at the wholesale level. Stock is at times stored under unfavorable temperature or humidity conditions; it is stacked improperly; or is not turned frequently enough. Losses take place in the packing room. The heaviest waste occurs in fresh fruits and vegetables. Often they are piled onto the sidewalk, left in the sun, bruised and mashed. Failure to cull spoiled units regularly causes spread of the spoilage to the sound units. Retarded turn-over, due to the effort to maintain price levels, causes waste. A study of the New York City Wholesale Produce Market - which may or may not be typical - showed a wastage of 7 percent of the fruits and vegetables moved through it.

(d) In the Retail Store

Over-all damage and loss to merchandise in one large national retail chain store organization has been estimated to be at least 6 percent. In the average retail store loss and damage have been estimated to range from as low as 3 percent to considerably higher than 6 percent. Waste is caused by new and inexperienced labor. At the "back of the house," food is piled on damp floors, where mold goes to work. Bags are dropped and split. At the "front of the house," large lots frequently are displayed outside, where unfavorable conditions of sun, heat, and cold cause deterioration. Failure to spread out and sort produce means waste through impregnation of good units by rotting ones. Many commodities deteriorate rapidly when not sprayed frequently and refrigerated promptly. Retarded turn-over, due to the effort to maintain price levels, causes some waste at the retail level as well as at the wholesale level.

(e) In the Public Eating Place

In restaurants, schools, and institutions, waste often occurs because of overstocking, inadequate facilities, overproduction, poor cooking, unskillful handling of food, inexperienced help. A principal cause of waste in public eating places is the preparation of an elaborate variety of dishes. People leave, on the average, perhaps 6 percent of their food on their plates. This is due to a variety of practices. In some restaurants the patrons are served portions larger than they want. Patrons often are served courses they don't really want, merely because such courses are included in the price of the meal. Overworked recipes contribute to plate waste. Patrons frequently order more than they will eat, and order unfamiliar dishes and do not eat them. Food left on the plates must for reasons of

health be consigned to the garbage can. Recent studies in college dining rooms show a food wastage of from 11 percent to 19 percent of the food supplies.

This clearly is only an incomplete sketch of waste - preventable and nonpreventable - in these areas, but it will enable us to examine waste in the home in its proper perspective to the problem as a whole.

(f) Waste in the Home

Waste occurs in the apparently insignificant potato peelings, the crust of bread, the half salad, the cold gravy that we threw out yesterday - multiplied by 34 million of American families who did the same. We find the causes of the waste are in the notions that the food we could have saved wouldn't have made any difference, that the food didn't taste good, that we didn't have time to finish our meal - multiplied by 34 million of American families who thought the same.

We have been producing some 300 pounds of garbage per person per year, most of which originates in the home. It is estimated that of this 300 pounds approximately 225 pounds is edible food.

We waste meats and other proteins; we waste dairy products, vegetables, fruits, cereal grain foods. Waste occurs in the planning, purchase, storage, preparation, serving, at the table, in the use of left-overs, and use of garden surplus.

6. HOW FOOD IS WASTED IN THE HOME

(a) Waste in the Planning of Meals

Lack of sound planning is responsible for as much if not more waste in the home than any other single factor. Failure to take full advantage of seasonal foods results in waste at the retail level. Failure to plan meals with variety and balance results in waste. Here is one reason why the family fails to eat all of the food served. Waste occurs through failure in planning to gauge accurately the storage facilities or the perishability of the produce purchased.

(b) Waste in the Purchasing of Food

Often the housewife purchases specially priced offerings in quantities that are too large, with the

result that before all of a given purchase can be consumed, some of it grows tiresome or spoils.

Many housewives are inclined to evaluate produce too largely on the basis of its appearance. This encourages merchants to strip off the outer (and more nourishing) leaves of such vegetables as cabbage and lettuce, merely because they may be slightly soiled.

Pears, peaches, apples, plums, with slight blemishes are passed by. They remain on display, deteriorate, and finally are thrown out, because of blemishes which originally may have affected no more than 2 percent or 3 percent of the fruit. Overlooked also is the fact that the cost to the retailer of this wasted produce must be added to the cost of the produce that is sold.

Shoppers handle the produce more than necessary. Fruit is squeezed and bruised while ripeness is being tested. Vegetables are pawed over and nicked while minds are being made up.

Shoppers accidentally drop or knock packaged merchandise off the display shelves and damage it. Cellophane-packaged cookies or dried peas, for example, are dropped and the cellophane split. Replaced on the shelf, such items are all too frequently rejected by other shoppers, and wind up as wasted food.

(c) Waste in the Storage of Food

Lack of information on proper storage methods to protect perishable vegetables causes waste.

Foods that should be covered are not covered. Dairy products are an example as are portions of left-overs after they have cooled. The left-overs lose their moisture and flavor. The dairy products absorb the odors of strong-odored foods. Failure to store meats in the coldest part of the refrigerator causes spoilage and waste. Foods are pushed to the back of the refrigerator and forgotten until they spoil. Potatoes and onions are put away in dark corners and neglected until they sprout.

Failure to make regular and frequent inspection of packaged foods gives insects and mice an opportunity to develop and attack food. The damage they do runs into millions of dollars every year.

(d) Waste in the Preparation of Food

Notwithstanding the potato shortage in the spring of 1943, millions of housewives continue to peel the potatoes they buy, not realizing that in consequence of this they lose a large part of the iron and vitamin C in the potatoes, as well as one-tenth to one-quarter of the bulk.

Most housewives still cook vegetables in too much water, then drain off the water and pour it down the sink, unaware that vitamins and minerals have seeped out of the vegetables and into the water. This happens because of the fear of scorching and because of habits formed from outdated advice.

We cook many vegetables such as cabbage and turnips too long, destroying flavor and valuable vitamins. We throw away outer leaves of the cauliflower, cabbage, endive, chard, celery, overlooking the nutrient value they add to stews and soups. Much waste occurs because the housewife in these busy days fails to try recipes which would make some of the less popular vegetables more than ordinarily appetizing. Many housewives throw out the left-overs, willy-nilly. Or withhold their best efforts to re-serve them appetizingly. Or lack the knowledge of what can be done with them.

(e) Waste at the Table

The most obvious waste of food takes place at the table. The actual causes of much of this waste lie in the planning, purchasing practices, storage, and preparation of the food. But part of the waste is caused also by the attitudes and habits that prevail at the table.

We resist "new" or unfamiliar foods. When they are served to us we often merely nibble at them and then reject them. The portions left uneaten are wasted. And the unpopularity of the experiment acts as a deterrent to the future purchase of the commodity involved, with the result that the commodity moves slowly and deteriorates in the retailers' bins.

Another source of waste derives from resistances built up in childhood. As adults some people rebel against foods which were forced on them as children. Many of us, especially men, have grown up with the notion that salad greens are "rabbit food." Many housewives consider leaf lettuce, parsley, and water cress to be

only decoration for the salad. They are, in fact, good sources of vitamin A. On the other hand, it is almost certain to be a sheer waste of food to serve and to force on members of the family foods to which a genuine repugnance has been established.

We serve on the table more food than we can eat, because it's pleasant to have more than enough. We urge on our guests more than they want, because we like to play the generous host and hostess.

It's a national habit to waste bread. We leave the loaf ends until they become hard, and then throw them out. Often we throw away bread left on both dinner plates and bread plates. (One slice of bread wasted per week in each of America's 34,000,000 families amounts to at least 2,000,000 loaves a week. 100,000,000 loaves a year. Actually, we waste much more than this).

Many of us follow a code of table manners that causes waste of an enormous amount of food. We leave the last four or five spoonfuls of juice in the grapefruit because it's indelicate to pick up the grapefruit and squeeze it. We leave some of the soup because it's "bad manners" to tip the soup bowl. We leave meat on the chop and chicken bones because it's "not polite" to pick up the bones with our fingers. We have a shortage of fats and butter, yet many of us fear social disapproval if we follow our natural inclination to soak up the gravy on our plates with a small piece of bread. We leave a little dessert on the plate to show that we're "not greedy."

However well such practices may have been justified before the war, they hardly can be justified now, when food is scarce here at home, and when hundreds of thousands of our civilian allies are hungry.

Here, then, are the broad outlines of the problem, with some detail on the more specific problem to which this handbook is addressed - the problem of food waste in the home. Many of the attitudes and habits back of the waste are firmly entrenched; others perhaps less so. Whatever the case, the food waste which is resulting from these habits and attitudes will not yield to sporadic publicity efforts but merits sustained attention.

7. CONSERVATION IS OUR ANSWER

(a) It's the Little Wastes that Count

Waste of only one-sixth of the potato during careful peeling in the average American kitchen piles up to a

national waste of more than 24,600,000 bushels a year. Waste of only 1 slice of bread a week at the average American dining table stacks up to a national waste of more than 100,000,000 loaves a year. Our average individual waste of 10 ounces of edible food a day amounts to the mountainous national waste of more than 14,000,000 tons a year. It's the little wastes that make up this national total.

(b) The Army Cuts Down Food Waste

At the direction of Major General E. B. Gregory, the Quartermaster General, a survey on food waste was made early in 1942 at Camp Lee, Va.; Fort Knox, Ky.; Fort Benning, Ga.; and Fort Devens, Mass. Corrective measures were taken and are estimated today to be saving more than 3,220,000 pounds of food daily on the basis of an Army of 4,500,000 men - the approximate size of the Army at the time the studies were made. Savings are increasing as the Army expands.

Here is how the Army achieves the savings: (1) Meals are prepared for only the number of men expected at each mess, eliminating much of the waste formerly caused by "absenteeism." (2) Rigid mess supervision is recommended. (3) Soldiers are asked to take only what they can eat, and to eat all they take. (4) The less popular foods are served on fewer occasions.

Is the Army setting an example for civilians to follow? Let's not bring up the rear of this parade! The armed forces lead in the fighting - we should lead in the conserving.

(c) Adventures in New Foods

There's never been a better time to introduce new and nourishing foods to your family - to shake off old menu habits and dress up the all-important family dinner.

Look around your market. Have you given soy beans a good trial? Chinese cabbage? Chard? Chicory? The nutritious new greens? Liver, kidney, sweetbreads, et cetera? Of course, none of these foods really are "new." Many families just don't know them very well. Are family preferences a problem here? Then check your recipes for hints. Try a special garnish. Play up the nutrient values of the new foods. Compare prices. Adventures in new foods will help the housewife serve a more successful wartime table.

(d) Vegetables for Victory

Nutritionists and medical authorities agree that our diets are weakest in fruits and vegetables, that we would tire less easily, feel better, and be victim of fewer ailments if we ate more fruits and vegetables. Meanwhile garbage studies indicate that at least 50 percent of our food waste is fruits and vegetables.

Let's prepare all of the edible parts of our fruits and vegetables. Let's eat all of each fruit and vegetable portion served to us. Here is an easy-to-follow formula for both health and conservation.

(e) Treasure in the Kitchen

The Bureau of Human Nutrition and Home Economics in the Department of Agriculture reveals that the beet tops represent 22 percent of the beet as purchased; cucumber parings 30 percent of the cucumber; outer leaves of the brussels sprouts 23 percent of the whole; the skin of the plum 10 percent of the whole; the turnip tops and parings 34 percent of the entire turnip.

The Bureau's specialists show also that these parts are on the whole as nutritious as the more commonly prepared and eaten parts of the vegetables. Still, often as not, the housewife considers these parts refuse and throws them away! Here is a veritable treasure chest of food, buried right in the kitchen. If the housewife will dig it up and dress it up a little she'll raise a healthier family and help America to beat the food shortage.

(f) "Save the Peel - Spare the Spud"

Roy F. Hendrickson, Director of the Food Distribution Administration, said recently at a nutrition conference in Washington, "America is famous, among other things, for its mashed potatoes; no one can mash them better. And mashed potatoes don't do the war job that potatoes must. Literally we mash much of their food value away, and we waste enormous quantities of really important supplies. Even a careful peeling job results in about 16 percent loss of the potato. Somehow we've got to get people to cook the potatoes with the skins and to eat the skins." Wasted potato peelings mean wasted food dollars, wasted food energy, wasted vitamin C, and wasted iron. Such waste won't help win this "smart man's war."

(g) "Vitamins Can Swim"

This means cook with little water, cook quickly, and not overcook. Vitamin C, thiamin, riboflavin, niacin, and some of the minerals escape from the vegetables and get into the cooking water. The clever housewife gives her family more nourishment per dollar by making a sauce or appetizer with the cooking water or by serving it in a soup or stew. Multiply such a saving by 34,000,000 - the number of homes in America - and you see how important it becomes. Remember - "U. S. Needs Us Strong."

(h) Join the "Clean Plate Club"

We should learn to clean up our plates at every meal. We start on many of the portions that are served to us, eat half or three-quarters of them, then skip on to something else. That we eat this much of our food, and no more, indicates that nothing is really wrong with the food, but that in truth we are being served more than we need.

Farmers on 6,000,000 farms work long hours through sun and rain and heat to produce our food. Last year we paid farmer, processor, shipper, wholesaler, retailer, restaurateur \$27,600,000,000 for food and drink combined. Let's order no more than we need. Let's eat what we pay for. Let's pledge to clean up our plates at every meal - and help beat Hitler and the Japs. Let's join the "Clean Plate Club"!

PART III: SUMMARY OF FACTS ON FOOD WASTE

1. HOW MUCH DO WE EAT?

American civilians buy for consumption about 1,514 pounds of food per person per year - an average of over 4 pounds per person per day - according to a survey made by the Bureau of Human Nutrition and Home Economics in the spring of 1942.

The Army requires more than this - buying about 5 pounds per soldier per day - according to the Quartermaster General's Office.

Despite rationing and some individual shortages, Americans are now, and are likely to remain, the best fed among all the peoples of the great powers. Even under war-time conditions we probably can improve our national health, as Great Britain has, if we put into practice what modern nutritional science has discovered.

2. HOW MUCH FOOD DO WE WASTE?

Analytical studies of garbage collected in 247 cities show that the garbage contains an average of 300 pounds of food per person per year - an average waste of more than 3/4 pound of food for each individual every day.

This amounts to roughly 20 percent of the food which is purchased by American householders. Adding such waste as fats and oils that are lost in careless cooking or poured down the sink, and subtracting inedible waste such as eggshells, coffee grounds, melon rinds, et cetera, we may reasonably estimate that above 15 percent of the edible food brought into American homes is wasted. This is equivalent to about 225 pounds of edible food waste per person per year, or about 3/5 pound per person per day. Raymond Pearl, Chief Statistician of the Food Administration in World War I, estimated that the wastage of food in the home amounts to 5 percent of the protein, 25 percent of the fats, and 20 percent of the carbohydrates - or an over-all waste of 19 percent of the calories.

In restaurants and other public eating places the best estimates available indicate that plate waste alone is estimated at 6 percent. Studies of representative college dining halls show a wastage of 11 to 19 percent of the food supplies.

In retail stores there is an estimated over-all food loss of about 3 percent of total sales. Losses in perishable fruits and vegetables are considerably higher. With the total retail

store sale of food amounting in 1942 to 15 billion dollars, this means a wastage of some 450 million dollars' worth of food in retail stores alone.

A case study of the New York City Wholesale Produce Market in 1940 indicated a loss of 7 percent in the wholesale distribution of fruits and vegetables in that area. This may or may not be representative of losses in wholesale markets in other cities.

Food losses occur also in the transportation of food to market by truck, boat, or train. Food losses in transit may be due to diseased or overripe fruits or vegetables included in the shipment, delays in routing, lack of icing facilities, rough handling, or other causes. Based on damage claims paid by Class I railroads, food losses in transportation would appear to be around 2 percent of the total food moved. Actual losses are doubtless above this level.

Avoidable farm losses sometimes occur when parts of crops are not harvested because prices are too low to cover harvesting and marketing costs, or when lower grades of produce are not fully utilized after harvest because of low prices. During the past decade (1933-42) such losses averaged about 2 percent of the total production of fruits and vegetables. Avoidable losses for individual produce included apples, 5 percent; plums, 3.7 percent; cherries, 3.5 percent; cabbage, 3.7 percent; cantaloup, 3.1 percent; watermelons, 2.5 percent; onions, 1.8 percent; and snap beans, 1.6 percent.

There are many other losses in the production of food prior to harvesting, part of which is avoidable. Plant diseases, insects, rodents, and careless cultivation all take a tremendous toll of planted crops. Disease alone in recent years reduced yields of important food crops as much as 15 percent for wheat, 13 percent for corn, 18 percent for potatoes, 12 percent for apples. Insects and rodents together cause damage estimated at close to 2 billion dollars annually.

Such estimates as are available indicate an over-all loss (including both avoidable and unavoidable waste) between the point of harvest on the farm and the point of sale by the retail market or its equivalent, of as much as 30 percent for tomatoes, lettuce, cauliflower; 25 percent for cabbage, spinach, celery; 20 percent for fruits such as apples, pears, peaches; 13 percent for oranges and grapefruit. For less perishable commodities such as potatoes, peas, and beets the estimated shrinkage or over-all loss is from 5 to 10 percent. These estimates relate to average conditions and actual losses. They vary, of course, from year to year and area to area, depending upon the particular conditions and difficulties encountered.

Adding together (1) the waste from farm to retail store, and (2) the waste in the home, but excluding losses on the farm prior to harvest, total food losses or over-all reduction in weight between amounts harvested and amounts actually consumed appear to be between 20 and 30 percent. The lower figure of 20 percent probably would represent a conservative estimate of over-all losses in this country, even in 1943.

3. WHAT KINDS OF FOOD DO WE WASTE?

Home wastage appears to be highest in perishables such as fruits and vegetables, and in baked goods. According to an analysis of 160 loads of garbage made by the Sanitary Engineering Research Laboratory of New York University, published in 1941, 23 percent of the garbage consisted of green vegetables, 27 percent of other vegetables, 29 percent of citrus and other fruits, 14 percent of baked goods, and 7 percent of meats, bones, and fish.

A survey made by the Bureau of Agricultural Economics, of retail stores in Washington, D. C., in 1940, indicates that spoilage there results in wasting 13.77 percent of the avocados, 6.8 percent of the cauliflower, 7.6 percent of the cabbage, 7.9 percent of the grapefruit, 12.29 percent of the kale greens, 9.2 percent of the peppers, and 7.8 percent of the peaches.

4. WHAT CAN WE DO ABOUT IT?

This statement describes food waste of two kinds: preventable and nonpreventable. Obviously we cannot completely eliminate the \$189,000,000 of food damage done every year by rats, nor the \$1,600,000,000 of damage done annually by insects. We cannot prevent some blight and rot. We cannot eliminate all bruising and injury of perishable food products in shipment and storage. But much of this wastage can be eliminated by vigorous action. And most of the plate waste in homes and restaurants can be stopped. Food waste in home storage and preparation can be considerably reduced. Retail store loss of food caused by overhandling can be controlled. Food wastage due to prejudice and extravagant eating habits is subject to control. If we can save no more than a quarter or a third of the 20 to 30 percent of our food supply that is now lost between harvest and garbage pail, the result would be immediately apparent in larger food reserves. Avoidable waste is, in fact, the largest and most economical extra food supply available to us. This is a war food job in which everyone can share.

Appendix

Food Conservation Talks by Food Specialists

This Handbook has been prepared for the widest possible use by all kinds of public speakers before all types of audiences. Its chief use, naturally, will be by laymen who have no training, experience, or interest in the professional handling, preparation, or serving of food. It is hoped, however, that students and experts in home economics and nutrition, and professional food dispensers will also talk to women's groups and other audiences on specialized aspects of food conservation. While they will need no special guidance concerning the subject matter of their speeches, the following outline is presented as a convenient summary of the remedies for food wastage factors in the home which can be expanded with whatever detail and illustrations may be desired:

- I. Prevent waste through proper meal planning: menus should be planned for each meal and by the week in accordance with:

1. Nutritional standards.
2. Family activities and physiological needs.
3. Seasonal abundances of various foods.
4. Balance of texture and color of foods to increase palatability.
5. Variations in weather and temperature.

- II. Care should be taken in the purchase of food to:

1. Buy only quantity to be used.
2. Avoid unnecessary handling, pinching, squeezing, etc.
3. Use care in handling and weighing in self-service stores.
4. Accept slightly blemished fruits and vegetables if they are basically sound and healthy.
5. Buy unrationed items.
6. Ask for the whole vegetable, outer leaves and all (excepting for carrots and rhubarb).
7. Buy earlier in the week - let's break up the week-end buying habit.

- III. In the storage of food in the home, observe the following rules:

1. Cover foods properly. Cover left-overs only after they have cooled.
2. Keep foods at the right temperatures.
3. Store meat in the coldest part of the refrigerator.
4. Survey stored foods daily; keep items moving.
5. Store packaged goods in insect- and rodent-proof containers.

6. Make use of suitable types of refrigeration and storage.
7. Take measures to eliminate insects and rodents.
8. Inspect storage units regularly.
9. Study and use the excellent manuals prepared for the housewife by Government agencies, and food and refrigeration companies.

IV. To avoid waste in the preparation of foods:

1. Cook vegetables in skins whenever possible.
2. Use small amounts of water to preserve nutrients - but avoid burning!
3. Save outer leaves of certain vegetables for stews and soups.
4. Try new recipes for plentiful or surplus foods.
5. Season less popular foods in a more appetizing way.
6. Use cooking methods that preserve nutrient values.

V. To get maximum food value from left-overs:

1. Save bread crumbs for use in creamed dishes, puddings, etc.
2. Use vegetable water in soups, sauces, vegetable drinks.
3. Bake left-over vegetables in a cream sauce.
4. Combine bits of vegetables in meat patties.
5. Use left-overs promptly.
6. Do not wrap warm food in wax paper or other coverings - wait until it has thoroughly cooled.

VI. Table etiquette, customs, and habits which waste food may be rectified if we all:

1. Decline dishes that are not wanted.
2. Tilt the soup bowl - squeeze the grapefruit.
3. Eat lettuce, cress, and parsley garnish.
4. Pick up chicken and chop bones.
5. "Dunk" bread in gravy and vegetable juices.
6. Serve average portions to guests.
7. Avoid overloading children's plates.
8. Simplify meals - eliminate needless varieties.
9. Use or develop interesting recipes for "new" foods.

